REMARKS

Claims 1-9 and 11-22 are currently pending in the application. By this response, no claims are amended, added, or canceled. Claims 11-15 were withdrawn from consideration in the Office Action dated March 10, 2006. Claim 22 was withdrawn from consideration in the outstanding Office Action dated August 9, 2006. Reconsideration of the rejected claims in view of the following remarks is respectfully requested.

Allowable Subject Matter

Applicants appreciate the indication that claim 6 contains allowable subject matter, and would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.[1] However, Applicants submit that all of the claims are in condition for allowance for the following reasons.

Restriction By Original Presentation

The Examiner has withdrawn claim 22 from consideration as being directed to a non-elected invention pursuant to constructive election by original presentation as set forth in 37 CFR §1.145 and as described in MPEP §821.03. The Examiner asserted that the restriction of claim 22 is proper under MPEP §806.05(f). This restriction is respectfully traversed.

The Examiner admitted in the Office Action dated August 9, 2006 that claim 22 is a linking claim. In fact, the Examiner stated, on page 3 of that Office Action: "Claim 22 link(s)

[1] Applicants note that claim 6 is indicated as rejected on the Office Action Summary (PTOL-326) mailed January 4, 2007. However, Since there is no rejection of claim 6 in the Detailed Action, and since the Detailed Action explains that claim 6 contains allowable subject matter (see page 5), Applicants will assume that claim 6 is objected to and not rejected.

inventions I and II." Applicants agree that claim 22 is a linking claim that links inventions I and II, as defined by the Examiner.

Applicants respectfully submit that it is improper to withdraw a linking claim from consideration when the linking claim links the elected invention to a non-elected invention. More specifically, MPEP §809 states:

> The linking claims must be examined with, and thus are considered part of, the invention elected.

Similarly, MPEP §814 states that a linking claim must be examined with the elected invention:

> The generic or other linking claims should not be associated with any one of the linked inventions since such claims must be examined with the elected invention.

It is clear from the above passages that a linking claim must be examined with the elected invention, and it is improper to withdraw a linking claim from consideration.

Accordingly, Applicants respectfully request that linking claim 22 be examined on the merits with the elected invention.

35 U.S.C. §103 Rejection

Claims 1-5, 7-9, and 16-21 were rejected under 35 U.S.C. §103(a) for being unpatentable over U.S. Patent No. 4,283,450 issued to Luck et al. ("Luck"). This rejection is respectfully traversed.

The examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness. To establish a *prima facie* case of obviousness,

three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). See MPEP §2142. Applicants submit that no proper combination of the applied art teaches or suggests each and every feature of the claimed invention.

Claim 1

The present invention relates generally to a panel and, more particularly, to a panel having a non-uniform density distribution throughout its thickness. In particular, claim 1 recites:

> 1. A panel having a support board made of glued and compressed fiber material to which a termination layer is applied in each case on a top side and an underside, and the termination layer of the top side has a structured surface, wherein the density on the top side of the support board is lower than the density of the support board on the underside.

The Examiner asserts that Luck discloses a panel having a core and high density skin layers on the exterior surface of the core. The Examiner notes that the top skin surface is hot pressed and embossed and can be coated with paint. The Examiner asserts:

> ... it would have been obvious to one of ordinary skill in the art for the density of the top skin to be lower than the density of the lower skin due to the top skin layer being embossed and having some of the material removed in the embossing process.

Applicants respectfully disagree and submit that Luck does not teach or suggest that the density on the top side of the support board is lower than the density of the support board on the underside, as recited in claim 1.

Luck discloses a fiberboard having integrally formed high-density skins. The surface fibers of a conventional fiberboard are impregnated with urea, and the fiberboard is post-pressed at elevated temperature and pressure. The post-pressing operation restructures the surface fibers contacted with urea to create the skins (col. 4, lines 35-36). The skins have a thickness of up to 0.06 inches (column 7, lines 35-43) and a density of about 40 to 55 pounds/ft^3 (e.g., about 641 to 881 kg/m^3). The remainder of the board (i.e., central core) has a density in the range of 10 to 35 pounds/ft^3 (e.g., about 160 to 560 kg/m^3). The skin may be provided with embossing plate details (col. 4, lines 28-33).

Luck does not teach or suggest the density on the top side of the support board is lower than the density of the support board on the underside. Moreover, the Examiner fails to even assert that Luck teaches or suggests this feature. Instead, the Examiner asserts that it would have been obvious to make the density of the top skin lower than the density of the lower skin. However, claim 1 recites densities of the support board (i.e., what the Examiner considers to be Luck's core), not that of the termination layers (i.e., what the Examiner considers to be Luck's skins). Therefore, the Examiner's assertion regarding the densities of the skins has no bearing on the above-noted feature of claim 1. And the Examiner does not assert that the density on the top side of Luck's core (which the Examiner asserts constitutes a support board) is lower than the density of the core on the underside. Therefore, the Examiner has failed to properly establish a *prima facie* case of obviousness with respect to claim 1 because the Examiner has failed to show how the applied reference teaches or suggests each and every feature of the claimed invention.

In any event, Luck simply does not teach or suggest the density on the top side of the core is lower than the density of the core on the underside. Instead, Luck consistently describes the core (i.e., what the Examiner considers to be a support board) as a uniform element, and makes no mention at all that the top side of the core has a density different from that of the underside of the core.

Furthermore, even assuming *arguendo* that the densities of the skins reads on the recited density of the support board, which the Examiner asserts but Applicants do not concede, Luck makes no suggestion whatsoever that the density of one skin is different from the density of the other. Luck consistently describes the skins as having the same density, and makes no mention at all that the top skin has a density different from that of the bottom skin. Apparently recognizing that Luck does not teach this feature of the claimed invention, the Examiner speculates that embossing the top skin would result in the top skin layer having a density lower than the density of the lower skin layer. Applicants respectfully disagree and submit that the Examiner is mischaracterizing the disclosure of Luck.

During embossing, as described by Luck, no material is removed (as asserted by the Examiner); rather, the material is compressed due to the pressing process described in lines 16-38 of col. 4. More particularly, Luck explicitly teaches that embossing happens during the pressing operation in the following passage:

> ... it has been found that the skin created by post-pressing a low density consolidated product having urea in at least the outer surface fibers thereof creates a hard, dense surface which, if desired, effectively and permanently reproduces embossing plate details on the surface of the product ... (col. 4, lines 27-34).

Based upon this passage of Luck, Applicants respectfully submit that, from a technical standpoint, the Examiner's assertions regarding the embossing are not correct. That is, during the embossing, no material is removed; rather, material is compressed since the embossing takes place during a stamping process. Luck teaches in column 4, lines 27-34, that the skin created by post-pressing having urea in at least the outer surface fibers creates a hard, dense surface, effectively and permanently reproducing embossing plate details on the surface. This means that during the stamping process the embossing plates are pressed against the fibers of the lightweight fiberboard. The embossing plates are heated to a temperature of at least 525 °F, effecting post-hardening. Therefore, the embossed surface (i.e., the upper surface) would be harder and denser than the lower surface.

Thus, contrary to the Examiner's assertion, Luck does not teach or suggest embossing by removing material. Instead, Luck teaches embossing during the pressing operation. If anything, this would result in the embossed top skin having a higher, not lower, density than the lower skin since the embossed layer would be even more compressed compared to the non-embossed layer.

For all of the above reasons, Applicants submit that Luck does not teach or suggest the density on the top side of the support board is lower than the density of the support board on the underside, as recited in claim 1. Since Luck does not teach or suggest all of the features of claim 1, Luck cannot arguably render obvious the claimed invention.

Furthermore, Applicants submit that the Examiner has failed to establish a *prima facie* case of obviousness with respect to Luck because the Examiner has failed to provide the requisite motivation for modifying Luck such that the density on the top side of the support board is lower than the density of the support board on the underside, as recited in claim 1. Instead, the Examiner merely asserts that it would have been obvious to make the density of one

skin lower than that of the other, but provides no teaching or suggestion as to why the skilled artisan would be motivated to do so. Therefore, the Examiner has failed to properly establish a *prima facie* case of obviousness with respect to claim 1.

Claims 2-4, 8, and 9

Applicants respectfully submit that claims 2-4, 8, and 9 depend from allowable independent claim 1, and are allowable for at least the reasons discussed above.

Moreover, Applicants submit that the applied reference does not teach or suggest many of the features of the dependent claims. For example, Luck does not teach or suggest: the support board has a density of less than 700 kg/m^3, as recited in claim 2; a gluing factor of greater than 10%, as recited in claim 3; the support board has a non-uniform density distribution over its cross section from the top side to the underside, as recited in claim 8; or a density of 1000 kg/m^3 on the underside with a density in the range of 400 kg/m^3 to 600 kg/m^3 in the center of the support board, as recited in claim 9.

Moreover, the Examiner admits that "Luck does not explicitly [show] that the panel has a density, gluing factor, or density distribution as claimed." The Examiner is of the opinion, however, that all of the recited features regarding density, gluing factor, and density distribution are obvious in view of Luck. Specifically, the Examiner asserts:

> ... such features are properties which can be easily determined by one of ordinary skill in the art. With regard to the limitations of the density, gluing factor or density distribution, absent a showing of unexpected results, it is obvious to modify the conditions of a composition because they are merely the result of routine experimentation. The experimental modification of prior art in order to optimize operation conditions (e.g. density, gluing factor or density distribution) fails to render claims patentable in the absence of unexpected results.

In view of the above, the Examiner has asserted that certain claimed properties (e.g., density, gluing factor, and density distribution) are the result of routine experimentation. However, the Examiner has failed to provide any factual basis for such reasoning. For example, the Examiner has failed to provide any reasoning regarding exactly what the scope of routine experimentation encompasses in the art of fiberboard panels, such as those provided by Luck. Moreover, the Examiner has failed to provide any reasoning that explains how, given Luck as a starting point, the claimed features are within such scope of routine experimentation. Accordingly, Applicants respectfully traverse the Examiner's assertion and request that documentary evidence supporting the assertion be provided in the next Office Action if the rejection is to be maintained.

Furthermore, Applicants note that MPEP §2144.05 states that, in regard to routine experimentation, only result-effective variables can be optimized. That is, a particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977). Applicants respectfully submit that the Examiner has failed to establish how the prior art recognizes that gluing factor and/or density distribution are result-effective variables. The Examiner's mere assertion that the recited parameters can be optimized does not satisfy the burden of factually supporting a *prima facie* conclusion of obviousness. Accordingly, Applicants respectfully request that the Examiner factually support the assertion that the parameters recited in claims 2-4, 8, and 9 are result-effective variables if the rejection is to be maintained.

In the Results to Arguments section of the outstanding Office Action, the Examiner asserts, regarding routine optimization, that "Applicant has presented no showing that Luck cannot show these claimed features." Applicants respectfully submit that the Examiner has failed to meet the initial burden of factually supporting his *prima facie* conclusion of obviousness with respect to claims 2-4, 8, and 9.[2] The Examiner has provided no evidence that the parameters recited in claims 2-4, 8, and 9 are recognized result-effective variables that can be optimized per MPEP §2144.05. Accordingly, Applicants are under no obligation at this time to submit evidence of nonobviousness.

In any event, even assuming *arguendo* that the claimed features are optimizable through routine experimentation, which Applicants do not concede, the claimed invention does indeed provide unexpected results. Exemplary panels with density distribution and gluing factors according to implementations of the invention provide the following benefits, as described in the specification:

> The fact that the density on the top side of the support board differs from that on the underside facilitates the operation of stamping or structuring the support board on account of the lower strength, as a result of which ***the wear to which the stamping plates or other structuring tools are subjected is reduced. It is likewise possible for the structuring or stamping to take place more quickly,*** which overall results in quicker and more cost-effective production. (page 2, lines 1-9, emphasis added)
>
> ...
>
> On account of the reduction in weight of the support boards of comparatively low relative density, the transportation costs are lowered and, furthermore, the support board achieves ***a hitherto unknown level of flexibility,*** which allows for specific profile configurations, in particular in the case of so-called click-in connections. (page 3, lines 27-31, emphasis added)
>
> ...

[2] The examiner bears the initial burden of **factually supporting** any *prima facie* conclusion of obviousness. If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness. MPEP §2142

> Furthermore, the increase in the gluing factor results in ***improved moisture resistance*** since the reduced proportion of woodbased materials in the boards reduces the inclination of the support board to swell up. (page 3, lines 35-38, emphasis added)
>
> ...
>
> In addition, the layers of different densities within the support board result in a refraction of the sound waves at the density-transition locations, ***so that the footfall and room sound is markedly reduced***. (page 4, lines 9-12, emphasis added)

Thus, the claimed invention does provide unexpected results. Therefore, contrary to the Examiner's assertion, the claimed invention is not merely the result of routine experimentation with the prior art.

For all of these reasons, Applicants submit that the rejection of claims 2-4, 8, and 9 in view of Luck is improper and should be withdrawn.

Claims 5 and 7

Applicants respectfully submit that claims 5 and 7 depend from allowable independent claim 1, and are allowable for at least the reasons discussed above with respect to claim 1.

Moreover, Applicants submit that Luck does not teach or suggest that isocyanates are used as a means for gluing woodbased materials of the support board, as recited in claim 5, or that a mixture of isocyanates and UF or MUF resins as a means for gluing woodbased materials of the support board, as recited in claim 7. In fact, Applicants note that the Examiner has failed to even address these features of claims 5 and 7 in the current Office Action.

In any event, Applicants submit that Luck makes no mention whatsoever of isocyanates. Furthermore, the Examiner admitted in the Office Action dated August 9, 2006 that "Luck does not explicitly disclose the binder comprising isocyanate". Even further, the Examiner has provided no motivation for modifying Luck to include the features of claims 5 and 7.

For all of these reasons, Applicants submit that the rejection of claims 5 and 7 in view of Luck is improper and should be withdrawn.

Claim 16

Independent claim 16 recites:

> 16. (previously presented) A panel, comprising:
> a support board composed of glued, compressed fiber material, having a top side and an underside;
> a first termination layer provided on the top side;
> a second termination layer provided on the underside,
> wherein the density of the support board continuously decreases from the top side to a substantial midpoint of the support board, and continuously decreases from the underside to the substantial midpoint.

Applicants submit that Luck does not teach or suggest that the density of the support board continuously decreases from the top side to a substantial midpoint of the support board, and continuously decreases from the underside to the substantial midpoint. The Examiner asserts that Luck does teach all of the features of claim 16, specifically reasoning:

> Because the core layer [of Luck] is less dense than the skin layers, it is expected for the density of the panel to continuously decrease from the top side to a substantial midpoint (core) and continuously decrease from the underside to the substantial midpoint (core), which would be substantially parabolic in shape.

Applicants respectfully disagree. Luck does not describe a density distribution within the core, much less of a density distribution as recited in claim 16. Instead, Luck consistently describes the core (i.e., what the Examiner considers to be a support board) as a uniform element, and makes no mention at all of a continuously decreasing density distribution within the core.

Applicants again note, as with claim 1 above, that the Examiner is improperly using the entire Luck apparatus (i.e., the core and the two skins) to read on features recited with respect to

only the support board. However, in claim 16, the support board (not the assembly of the support board and the termination layers) is recited as having a density continuously decreasing from the top side to a substantial midpoint of the support board, and continuously decreasing from the underside to the substantial midpoint. The Examiner's assertion regarding the densities of the skins in relation to the core does not address the above-noted features of claim 16. Put another way, the Examiner has failed to explain how Luck teaches or suggests that the core (i.e., what the Examiner considers the support board in Luck) has a density continuously decreasing from the top side of the core to a substantial midpoint of the core, and continuously decreasing from the underside of the core to the substantial midpoint of the core.

Claim 17

Applicants respectfully submit that claim 17 depends from allowable independent claim 16, and is allowable for at least the reasons discussed above with respect to claim 16.

Moreover, Applicants submit that Luck does not teach or suggest the density at the top side of the support board is less than the density at the underside of the support board, as recited in claim 17. As discussed above with respect to claim 1, Luck does not teach or suggest that the density of the top side of the core is less than the density of the underside of the core. Moreover, the Examiner's assertions regarding the densities of the skins do not address the recited features of the claim (i.e., the density distribution of the support board, not of the termination layers).

Claims 18 and 19

Applicants respectfully submit that claims 18 and 19 depends from allowable independent claim 16, and are allowable for at least the reasons discussed above with respect to claim 16.

Claim 20

Applicants respectfully submit that claim 20 depends from allowable independent claim 16, and is allowable for at least the reasons discussed above with respect to claim 16.

Moreover, Applicants submit that Luck does not teach or suggest a density distribution through a thickness of the support board is substantially parabolic in shape, as recited in claim 20. The Examiner's assertion regarding a parabolic shaped density distribution with respect to the top skin, core, and lower skin does not render claim 20 obvious for at least two reasons: first, it is completely unsupported by the evidence of record; and, second, it does not address the recited features of the claim (i.e., the density distribution of the core, not of the termination layers).

Claim 21

Applicants respectfully submit that claim 21 depends from allowable independent claim 16, and is allowable for at least the reasons discussed above with respect to claim 16.

Moreover, Applicants submit that Luck does not teach or suggest that the support board comprises cover layers and the first termination layer and second termination layer are glued to the cover layers, as further recited in claim 21. Luck only discloses a top skin, core, and lower skin, and makes no mention of cover layers between the skins and core. Furthermore, the Examiner does not even address this feature in the outstanding Office Action.

Accordingly, Applicants respectfully request that rejection of claims 1-5, 7-9, and 16-21 be withdrawn.

Rejoinder of Withdrawn Claims

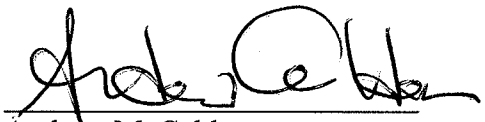
Applicants respectfully submit that claim 22 is a linking claim in accordance with MPEP §809.03. More particularly, claim 22 includes the process limitations of claim 11 and depends from product claim 1, thereby linking the process and the product. Therefore, pursuant to MPEP §821.04, rejoinder of withdrawn claims 11-15 is proper since the elected "panel invention" is allowable, and all claims to the non-elected "process invention" depend from or otherwise require all the limitations of an allowable claim (i.e., allowable claim 22 includes all of the features of claims 1 and 11).

Accordingly, Applicants respectfully request that claims 11-15 be rejoined, and claims 1-9 and 11-22 be allowed.

CONCLUSION

In view of the foregoing remarks, Applicants submit that all of the claims are patentably distinct from the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue. The Examiner is invited to contact the undersigned at the telephone number listed below, if needed. Applicants hereby make a written conditional petition for extension of time, if required. Please charge any deficiencies in fees and credit any overpayment of fees to Attorney's Deposit Account No. 19-0089.

Respectfully submitted,
Thomas GRAFENAUER



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